Chapter 5
Stress, Psychological Factors, and Health
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Stress, Psychological Factors, and Health

Health psychologist - A psychologist who studies the role of psychological factors in physical illness.

Stress - A demand made on an organism to adapt or adjust.

Stressor - A source of stress.

Adjustment disorders

Adjustment disorder - A maladaptive reaction to an identified stressor, characterized by impaired functioning or emotional distress that exceeds what would normally be expected.

According to the DSM, the maladaptive reaction is characterized by significant impairment in social, occupational, or academic functioning or by states of emotional distress that exceed those normally induced by the stressor.

Prevalence estimates of the rates of the disorder in the population vary widely.
**Stress and illness**

Psychological sources of stress not only diminish our capacity for adjustment, but also may adversely affect our health.

Stress is associated with an increased risk of various types of physical illness, ranging from digestive disorders to heart disease.

The field of psychoneuroimmunology studies relationships between psychological factors, especially stress, and the workings of the endocrine system, the immune system, and the nervous system.

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**Stress and the Endocrine System**

**Endocrine system** - The system of ductless glands that secrete hormones directly into the bloodstream.

**Hormones** - Substances secreted by endocrine glands that regulate body functions and promote growth and development.

The endocrine system consists of glands distributed throughout the body.
Major glands of the endocrine system

The glands of the endocrine system pour their secretions—called hormones—directly into the bloodstream. Although hormones may travel throughout the body, they act only on specific receptor sites. Many hormones are implicated in stress reactions and various patterns of abnormal behavior.

Stress and the Immune System

Immune system - The body's system of defense against disease.

Leukocytes are white blood cells, that systematically envelop and kill pathogens such as bacteria, viruses, and fungi, worn-out body cells, and cells that have become cancerous.

Leukocytes recognize invading pathogens by their surface fragments, called antigens, literally antibody generators.

The war within
The September 11, 2001 terrorist attacks on America changed everything.

Before 9/11 we may have felt secure in our homes, offices, and other public places from the threat of terrorism.

But now, terrorism looms as a constant threat to our safety and sense of security.

<table>
<thead>
<tr>
<th>Stress-Related Symptoms Reported by Americans in the Week Following the Terrorists Attacks of September 11, 2001</th>
<th>Depression (difficulty concentrating)</th>
<th>Insomnia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Men</td>
<td>42</td>
<td>44</td>
</tr>
<tr>
<td>Women</td>
<td>79</td>
<td>53</td>
</tr>
<tr>
<td>Gender combined</td>
<td>71</td>
<td>49</td>
</tr>
</tbody>
</table>

General adaptation syndrome (GAS) - The body’s three-stage response to states of prolonged or intense stress.

Alarm reaction - The first stage of the GAS, characterized by heightened sympathetic activity.

Fight-or-flight reaction - The inborn tendency to respond to a threat by either fighting or fleeing.
The General Adaptation Syndrome

**Resistance stage** - The second stage of the GAS, involving the body's attempt to withstand prolonged stress and preserve resources.

**Exhaustion stage** - The third stage of the GAS, characterized by lowered resistance, increased parasympathetic activity, and eventual physical deterioration.

The exhaustion stage is characterized by dominance of the parasympathetic branch of the ANS.

### Table 5.3

**Stress-Related Changes in the Body Associated with the Alarm Reaction**

- Cortisol and epinephrine are released.
- Heart rate, respiratory rate, and blood pressure increase.
- Muscles tense.
- Blood shifts from the internal organs to the skeletal muscles.
- Digestion is inhibited.
- Sugar is released by the liver.
- Blood clotting ability is increased.
- Stress triggers the alarm reaction. The reaction is defined by secretion of corticosteroids, catecholamines, and activity of the sympathetic branch of the ANS. The reaction is defined by secretion of stress hormones and increased activity of the sympathetic branch of the ANS.
Stress and Life Changes

Researchers have investigated the stress–illness connection by quantifying life stress in terms of life changes (also called life events).

Life changes are sources of stress because they force us to adjust.

They include both positive events, such as getting married, and negative events, such as the death of a loved one.

Acculturative Stress: Making It in America

One of the primary sources of stress imposed on immigrant groups, or on native groups living in the larger mainstream culture, is the need to adapt to a new culture.

We can define acculturation as the process of adaptation by which immigrants, native groups, and ethnic minority groups adjust to the new culture or majority culture through making behavioral and attitudinal changes.

Acculturative stress - Pressure to adjust to a host or mainstream culture.

Acculturative Stress: Making It in America

Research with Hispanic (Latino) Americans that highlight psychological risks associated with acculturation:

* Increased risk of heavy drinking among women.
* Increased risk of delinquency, smoking, and sexual intercourse among adolescents.
* Increased risk of disturbed eating behaviors.
Psychological Factors That Moderate Stress

Stress may be a fact of life, but the ways in which we handle stress help determine our ability to cope with it.

Individuals react differently to stress depending on psychological factors such as the meaning they ascribe to stressful events.

For example, whether a major life event, such as pregnancy, is a positive or negative stressor depends on a couple’s desire for a child and their readiness to care for one.

Styles of Coping

Emotion-focused coping - A coping style that attempts to minimize emotional responsiveness rather than deal with the stressor directly.

Problem-focused coping - A coping style that attempts to confront the stressor directly.

Self-efficacy expectancies - Beliefs in one’s ability to accomplish particular tasks.
Psychological Hardiness

Psychological hardiness - A cluster of stress-buffering traits characterized by commitment, challenge, and control.

Three key traits distinguished the psychologically hardy executives:

1. Commitment.
2. Challenge.
3. Control over their lives.

Optimism

Among heart disease patients, optimistic attitudes are associated with less emotional distress.

Among cancer patients, optimism is associated with lower levels of emotional distress, better psychological adjustment, and lower levels of reported pain.

Among pregnant women, it is linked to better birth outcomes, such as higher infant birth weights.

Optimism

Positive psychology - A growing contemporary movement within psychology that focuses on the positive attributes of human behavior.

The developers of this movement believe that psychology should focus more of its efforts on the positive aspects of the human experience, rather than just the deficit side of the human equation, such as problems of emotional disorders, drug abuse, and violence.
Social Support
The role of social support as a buffer against stress is well documented.

In one study, having a broad network of social contacts was associated with greater resistance to developing an infection following exposure to a common cold virus.

The investigators believe that having a wide range of social contacts may help protect the body's immune system by serving as a buffer against stress.

Ethnic Identity
African Americans, on the average, stand a greater risk than Euro Americans of suffering chronic health problems, such as obesity, hypertension, heart disease, diabetes, and certain types of cancer.

The particular stressors that African Americans often face, such as racism, poverty, violence, and overcrowded living conditions, may contribute to their heightened risks of serious health-related problems.

Ethnic identity is associated with perceptions of a better quality of life among African Americans and appears to be more strongly related to psychological well-being among African Americans than among White Americans.

Headaches
Headaches are symptoms of many medical disorders.

When they occur in the absence of other symptoms, however, they may be classified as stress-related.

By far the most frequent kind of headache is the tension headache.
Theoretical Perspectives

The underlying causes of headaches remain unclear and subject to continued study.

One factor contributing to tension headaches may be increased sensitivity of the neural pathways that send pain signals to the brain from the face and head.

Migraines headaches may involve an underlying central nervous system disorder involving nerves and blood vessels in the brain.

The neurotransmitter serotonin is also implicated.

Migraine!

Migraine headaches involve intense throbbing pain on one side of the head. They may be triggered by many factors, such as hormonal changes, exposure to strong light, changes in barometric pressure; hunger, exposure to pollen, red wine, and use of certain drugs and even monosodium glutamate (MSG).

Treatment

Commonly available pain relievers, such as aspirin, ibuprofen, and acetaminophen, may reduce or eliminate pain associated with tension headaches.

Drugs that constrict dilated blood vessels in the brain or help regulate serotonin activity are used to treat the pain from migraine headache.

Biofeedback training (BFT) - A method of feeding back to the individual information about bodily functions so that the person can gain some degree of control over these functions.
Cardiovascular Disease

Cardiovascular disease - A disease or disorder of the cardiovascular system, such as coronary heart disease or hypertension.

Coronary heart disease (CHD) - is the major form of cardiovascular disease, accounting for about 700,000 deaths annually, mostly from heart attacks.

CVD is the leading cause of death for both men and women, claiming even more women’s lives than breast cancer.

Negative Emotions

Frequent emotional distress in the form of anger, anxiety, and depression can have damaging effects on the cardiovascular system.

Type A behavior pattern (TABP) - A behavior pattern characterized by a sense of time urgency, competitiveness, and hostility.

Evidence indicates that episodes of acute anger can actually trigger heart attacks and sudden cardiac death in some people with established heart disease.

Emotions and the heart.
Social Environmental Stress

Social environmental stress also appears to heighten the risk of CHD.

Such factors as overtime work, assembly-line labor, and exposure to conflicting demands are linked to increased risk of CHD.

Researchers in Sweden find that among women, marital stress triples the risk of recurrent cardiac events, including heart attacks and cardiac death.

Ethnicity and CHD

Coronary heart disease is not an equal opportunity destroyer.

European Americans (non-Hispanic Whites) and African Americans (non-Hispanic Blacks) have the highest rates of death due to coronary heart disease.

Factors such as obesity, smoking, diabetes, and hypertension play important roles in determining relative risks of CHD and the rate of CHD-related deaths.

Coronary heart disease death rates in relation to race and ethnicity

![Graph showing coronary heart disease death rates by race and ethnicity](image)
Asthma

Asthma is a respiratory disorder in which the main tubes of the windpipe—the bronchi—constrict and become inflamed, and large amounts of mucus are secreted.

During asthma attacks, people wheeze, cough, and struggle to breathe in enough air.

According to the Centers for Disease Control (CDC), an estimated 14 million adults and 5 million children in the United States are affected by asthma.

Theoretical Perspectives

Many causal factors are implicated in asthma, including allergic reactions; exposure to environmental pollutants, including cigarette smoke and smog; and genetic and immunological factors.

Asthmatic reactions in susceptible people can be triggered by exposure to allergens such as pollen, mold spores, and animal dander; by cold, dry air; and by emotional responses such as anger or even laughing too hard.

Psychological factors such as stress, anxiety, and depression can increase susceptibility to asthmatic attacks.

Ethnicity and Hypertension.

![Graph showing hypertension rates by ethnicity and gender.](image-url)

**FIGURE 1.2** Ethnicity and Hypertension.
Treatment

Although asthma cannot be cured, it can be controlled by:

Reducing exposure to allergens

Desensitization therapy ("allergy shots") to help the body acquire more resistance to allergens.

Through the use of inhalers.

And by drugs that open bronchial passages during asthma attacks (called bronchodilators) and others (called anti-inflammatories) that reduce future attacks by helping to keep bronchial tubes open.

Cancer

The word cancer is arguably the most feared word in the English language, and rightly so: One of every four deaths in the United States is caused by cancer.

Cancer claims about half a million lives in the United States annually, one every 90 seconds or so.

Men have a one in two chance of developing cancer at some point in their lives; for women the odds are one in three.

Cancer involves the development of aberrant, or mutant, cells that form growths (tumors) that spread to healthy tissue.

Cancerous cells can take root anywhere—the blood, the bones, lungs, digestive tract, and reproductive organs.

When it is not contained early, cancer may metastasize, or establish colonies throughout the body, leading to death.
**Stress and Cancer**

A weakened or compromised immune system may increase susceptibility to cancer.

It remains to be seen whether psychological interventions actually increase the length of survival of patients suffering from cancer.

Cancer patients may benefit from training programs that focus on developing coping skills, such as relaxation, stress management, and coping thoughts, to help relieve the stress and pain of coping with cancer.

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**Acquired Immunodeficiency Syndrome (AIDS)**

Acquired immunodeficiency syndrome (AIDS) is a disease caused by the human immunodeficiency virus (HIV).

HIV attacks the immune system, leaving it helpless to fend off diseases it normally would hold in check.

HIV/AIDS is one of history's worst epidemics.

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**Adjustment of People with HIV and AIDS**

Coping-skills training and cognitive-behavioral therapy can help improve psychological functioning, ability to handle stress, and quality of life among patients with HIV/AIDS and reduce their feelings of depression and anxiety.

Treatment may incorporate training in stress-management techniques, such as self-relaxation and positive mental imagery, and cognitive strategies to control intrusive negative thoughts and preoccupations.

The importance of stress management skills is highlighted by findings that stressful life events and passive coping (use of denial) were associated with faster progression to AIDS in HIV infected men.
The Case of Julia

Adjustment to physical illness/HIV positive

Psychological Interventions to Reduce Risky Behaviors

Providing information about risk reduction alone is not sufficient to induce widespread changes in sexual behavior. 

*Psychological interventions* are effective in helping people alter these risky behaviors.

These programs raise people’s awareness about risky behaviors and help them develop more adaptive behaviors, such as learning how to refuse invitations.

Preventing AIDS

People may decrease the risk of being infected by HIV and other sexually transmitted diseases (STDs) by taking the following measures.

1. Maintaining lifelong celibacy.
2. Remaining in a lifelong monogamous relationship with an uninfected person who is doing the same thing.
3. Being discerning in one’s choice of sex partners.
4. Being assertive with sex partners.
5. Inspecting one’s partner’s sex organs.
6. Using latex condoms.
8. Consulting a physician following suspected exposure to a sexually transmitted disease (STD).
10. Avoiding sexual activity if there are doubts about safety.
QUESTIONS?